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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,338	09/24/2001	Yuji Iseki	214306US2RD	4632
22850	7590	09/10/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			GRAYBILL, DAVID E	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,338

Applicant(s)

ISEKI ET AL.

Examiner

David E Graybill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following is a quotation of MPEP 2111.01 [R-1]:

THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING" UNLESS THEY ARE DEFINED IN THE SPECIFICATION

While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (discussed below)>; MSM Investments Co. v. Carolwood Corp., 259 F.3d 1335, 1339-40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001). One must bear in mind that, especially in nonchemical cases, the words in a claim are generally not limited in their meaning by what is shown or disclosed in the specification. It is only when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language. In re Vogel, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970).

In claims 10 and 13 the scope of the language "shaped into a chip configuration adapted for surface mounted technology" is unclear because the language is not clearly defined in the disclosure, and it otherwise has no plain meaning.

Claims 10 and 13 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections supra, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of

prior art. As stated in *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims. Also see *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious). See also MPEP 2143.03 and 2173.06.

In the rejections *infra*, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1-6, 11, 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubora (6504096).

At column 6, line 56 to column 10, line 15; column 11, lines 30-34; column 12, lines 31-67; and column 14, lines 63-64, Okubora discloses a semiconductor device comprising: a module substrate 42 having a first main surface and a second main surface facing with the first main surface; a plurality of substrate-cite interconnects 4a, 4b disposed on the first main surface; a semiconductor chip 10 having top and bottom surfaces, being mounted with a flip chip configuration, configured such that the top surface of said semiconductor chip facing to the first main surface of said module substrate so as to be aligned with said substrate-cite interconnects; a plurality of joints 20 connected to said substrate-cite interconnects, respectively; a circuit board 16 having a top surface (the entire top surface) larger than areas (the areas directly beneath the joints) of the first and second main surfaces of said module substrate so that said module substrate is mounted on a localized portion of the top surface (the portion in direct contact with the joints) and a bottom surface facing with the top surface; a plurality of board-cite interconnects "patterned parts" disposed on the top surface of the circuit board, each being connected to one of said joints in the

localized portion of top surface; and a first heat conductive material 14 thermally connecting the bottom surface of said semiconductor chip with the top surface of said circuit board; a heat conductive plate 16 in contact with said first heat conductive material; a second heat conductive material 11a in contact with said heat conductive plate and connecting thermally said heat conductive plate with the bottom surface of said semiconductor chip; an active element region "element forming surface" disposed at the top surface of said semiconductor chip and a plurality of bonding pads 10c-10f surrounding the active element region, the bonding pads disposed at a peripheral region on the top surface of said semiconductor chip; a plurality of bumps 8, each of bumps is sandwiched between one of said bonding pads and one of the said substrate-cite interconnects; a sealing resin 10g inserted between tie top surface of said semiconductor chip and said first main surface of said module substrate; a plurality of back interconnects 44 disposed on the second main surface; a plurality of vias "internal interconnections," and "interconnections inside the carrier board," each connecting one of said back interconnects to one of corresponding substrate-cite interconnects; a dielectric spacer 18 disposed on the first main surface, the dielectric spacer having substantially same thickness as a thickness of said semiconductor chip, enclosing said semiconductor chip and at least

partly said joint; wherein said substrate-cite interconnects are sandwiched between said dielectric spacer and the first main surface.

However Okubora does not appear to explicitly disclose each of the board-cite interconnects extending from the localized portion to an outer area on the top surface.

Nonetheless, as cited, Okubora discloses board-cite interconnects 4b extending from a localized portion to an outer area on the top surface of the board 42. Moreover, it would have been obvious to similarly extend the board-cite interconnects "patterned parts" of board 16 because it would enable access for electrical connection.

However, Okubora does not appear to explicitly disclose via metals.

Nevertheless, as cited, Okubora teaches via metal 4a, and it would have been obvious to use the metal 4a for the vias of Okubora because it would facilitate provision of the plurality of vias of Okubora.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubora as applied to claim 6 supra, and further in combination with Anderson (5969461).

As cited, Okubora discloses a resin-blocking groove 42a, selectively dug "pattern etching" at the first main surface, disposed just above the active element region.

To further clarify the disclosure of a resin blocking groove, it is noted that the limitation "resin blocking" is a statement of intended use of the groove which does not result in a structural difference between the claimed groove and the groove of Okubora. Further, because the groove of Okubora has the same structure as the claimed groove, it is inherently capable of being used for the intended use, and the statement of intended use does not patentably distinguish the claimed groove from the groove of Okubora. Similarly, the manner in which a product operates is not germane to the issue of patentability of the product; *Ex parte Wikdahl* 10 USPQ 2d 1546, 1548 (BPAI 1989); *Ex parte McCullough* 7 USPQ 2d 1889, 1891 (BPAI 1988); *In re Finsterwalder* 168 USPQ 530 (CCPA 1971); *In re Casey* 152 USPQ 235, 238 (CCPA 1967). Also, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."; *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). And, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims."; *In re Young*, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 136 USPQ 458, 459 (CCPA 1963)). And, claims directed to product must be distinguished from the prior art in terms of structure rather than function. *In re Danley*, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does [or is intended to do]."

Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

However, Okubora does not appear to explicitly disclose wherein said sealing resin is selectively disposed on a peripheral region of said semiconductor chip so as not to contact with the active element region; and a coat-prevention film selectively contacted with the first main surface, disposed just above the active element region.

Nonetheless, at column 2, line 19 to column 5, line 17, Anderson teaches wherein sealing resin 28 is selectively disposed on the peripheral region of said semiconductor chip 10 so as not to contact with the active element region 12; and a coat-prevention film 26 selectively contacted with the first main surface 30, disposed just above the active element region. Moreover, it would have been obvious to combine this product of Anderson with the product of Okubora because it would enable manufacture of a SAW device.

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

In response to this requirement, please indicate where the specification provides a clear definition for the claim language "shaped into a chip configuration adapted for surface mounted technology." If there is no

clear definition in the specification for the language, please explicitly define the shape of a circuit component shaped into a chip configuration adapted for surface mounted technology, and provide evidence supporting this definition.

Applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.

A complete reply to this Office action must include a complete reply to the requirement for information. The time period for reply to the requirement coincides with the time period for reply to this Office action.

Applicant's remarks filed 6-22-4 have been fully considered and are adequately addressed by the rejections supra.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will

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expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

For information on the status of this application applicant should check PAIR:

Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
3-Sep-04